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ABSTRACT

This report evaluates a summer program funded under Chapter 1 of the Education Consolidation and Improvement Act (ECIA) and administered by the Division of Special Education of the New York City Board of Education. The 1989 Chapter 1 Reading and Mathematics with Athletics summer program served 1,537 students with mild to moderate handicaps in grades 2 through 8 at 13 sites in elementary, intermediate, and junior high public and nonpublic schools. The program was designed to provide reading and mathematics instruction while fostering social and emotional development. The program goal was that 75 percent of students attending a minimum of 15 sessions would master 2 or more skill objectives on the reading and mathematics Individualized Criterion-Referenced Test (ICRT). Almost all teachers used a holistic approach to instruction and found it satisfactory. Many integrated reading with athletic activities, field trips with daily lessons, reading with math lessons, and athletics with math lessons. The program surpassed its goals in both reading and mathematics. Analysis of the ICRT results indicated that 94 percent of students mastered two or more reading objectives and 97 percent mastered two or more mathematics objectives. The report presents five recommendations and includes statistical data in three tables. (AF)

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OREA Report

DISTRICT 75/CITYWIDE
E.C.I.A. CHAPTER 1
READING AND MATHEMATICS
WITH ATHLETICS

SUMMER 1989

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E.C.I.A. CHAPTER 1
READING AND MATHEMATICS
WITH ATHLETICS

SUMMER 1989

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This report was prepared by the Special Education Evaluation Unit Ronald C. Miller, Unit Manager of the Office of Research, Evaluation, and Assessment (OREA) of the New York City Public Schools. Marcia Torres, Evaluation Specialist, was the study manager and William Askins was the Senior Consultant. Data analysis was the responsibility of Project Analyst Arnold Simmel, and Project Analyst Lynn Mulkey. Consultant William Tierney conducted most of the interviews and observations for this study and prepared the first draft of the report.

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E.C.I.A. Chapter 1
Reading and Mathematics With Athletics
Summer 1989

SUMMARY

- The Chapter 1 Reading and Mathematics with Athletics program was fully implemented. During the 1989 summer session students received remedial instruction in reading and mathematics while developing social and emotional skills.

- Students not only met but surpassed the objectives for mastery in both reading and mathematics.

The Division of Special Education's (D.S.E.) District 75 of the Board of Education (B.O.E.) administered the Chapter 1 summer program. This program provided reading and mathematics instruction while fostering the social and emotional development of 1,537 students with mild to moderate handicaps in grades two through eight at 13 sites in elementary, intermediate, and junior high public and nonpublic schools.

The program goal was that 75 percent of students attending a minimum of 15 sessions would master two or more skill objectives on the reading and mathematics Individualized Criterion-Referenced Test (I.C.R.T.). Results were that 94 percent of the students mastered two or more reading objectives and 97 percent mastered two or more mathematics objectives. These results clearly surpassed the program goals.

The program was staffed by a program coordinator, borough supervisors, one site supervisor and one unit teacher at each site. There were a total of 143 Reading and Mathematics teachers, and 143 paraprofessionals. Closely clustered, larger schools accessible to public transportation were selected as sites for the program.

Most of the teachers reported that in-service training had been useful and sufficient. They reported that they had used a holistic approach to instruction and found it satisfactory. Many integrated reading with athletic activities, although they rarely did so for younger, lower-functioning students. They sometimes integrated field trips into daily lessons, reading into mathematics lessons (but seldom the reverse), and athletics into mathematics lessons. Chapter 1 teachers maintained regular contact with program parents through phone calls, notes, individual conferences, open school nights, and parent workshops.

Teachers identified the following program strengths: the work of program staff, teachers, and paraprofessionals;the quality of program materials (although the quantity was not sufficient); and the excellence of program coordination.

Teachers reported that areas needing improvement were: bus transportation, teacher training, unbearable heat in some classrooms, too much testing, too few field trips, too much paperwork, an inadequate supply of materials, and the absence of the Big Apple program during the last two weeks of instruction.

Teachers suggested: more teacher involvement in ordering materials to ameliorate the lack of supplies, the use of ongoing tests to generate information

currently derived from the I.C.R.T., consistent use of downstairs classrooms to avoid the problem of extreme heat, improved coordination of the instructional program with the Big Apple program, and more time for staff development activities.

Based on the findings of its evaluation, OREA makes the following recommendations:

- In order to ameliorate the lack of supplies, involve teachers in ordering materials.
- Use ongoing tests to generate information currently derived from the I.C.R.T.
- Use downstairs classrooms to avoid the problem of extreme heat.
- Improve coordination of the instructional program with the Big Apple program.
- Allocate more time for staff development activities.

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I. INTRODUCTION

PROGRAM GOALS

The 1989 Chapter 1/P.S.E.N. Remedial Reading and Mathematics with Athletics Summer program (Chapter 1) was designed by the Division of Special Education's (D.S.E.) District 75 of the Board of Education (B.O.E.) to help students maintain the gains they had made and master those skills which they had not mastered during the school year. The program was also intended to enrich students' learning experiences by providing reading and math instruction while fostering their social and emotional development.

PROGRAM DESCRIPTION

The program was designed to operate five days a week for four hours a day (8:30 to 12:30), from July 10 to August 18, at 13 sites; each site was to have 11 Chapter 1 classes. Unlike the full-year program, the summer program was intended to provide all students with both reading and math instruction for 60 minutes a day in each area, on average. The instructional program would be complemented by a "Big Apple" games (Track and field activities used to motivate students) component. Two half-hour periods would be provided for breakfast and lunch.

Reading instruction was designed to be taught as an integrated process including the development of listening, speaking, and writing skills. A holistic instructional method would be used, which would include directed reading activities and word and phrase recognition related to passage comprehension.

Math concepts, computations, and problem solving would be taught by using manipulative, representational, and abstract materials requiring the use of concrete, semi-

concrete, and abstract levels of understanding.

Learning objectives for individual students would be based on their reading and math test scores on the spring citywide tests and on the Individualized Criterion-Referenced Test (I.C.R.T.) which would be given to each student during the first week of the summer term. Teachers would chose two objectives in each area for each student to master during the summer term.

REPORT FORMAT

This report presents OREA's evaluation of the Chapter 1 1989 summer program. It is organized as follows: the evaluation methodology is described in section II, the evaluation findings are presented in section III, and OREA's conclusions and recommendations are discussed in section IV.

II. EVALUATION METHODOLOGY

OREA's evaluation of the Summer 1989 Chapter 1 program was generated from an analysis of qualitative data on program implementation, which consisted of student characteristics, criteria for student and site selection, staff development, student instruction, parent contact, and program strengths and weaknesses, as well as an analysis of quantitative data of student achievement in reading and math. The questions OREA addressed in the evaluation are presented below.

EVALUATION QUESTIONS

Program Implementation

- What were the characteristics of students who participated in the program?
- What criteria did program staff use to select student participants and program sites?
- What did staff training consist of and how did participants perceive the quality of these activities?
- What did instructional planning consist of?
- What instrument did staff use to measure student achievement levels and how satisfactory was it?
- What equipment and materials did the classroom teachers use in instruction?
- What instructional approaches and strategies did the classroom teachers use in the classroom, and how satisfactory were they?
- What did parent contact consist of, and to what extent was it maintained on a regular basis?
- What were the program's strengths and weaknesses as identified by program participants?

Program Outcomes

Did the Chapter 1 program meet the following objectives?

- By August 18, 1989, 75 percent of students who attend a minimum of 15 sessions will show mastery of two or more objectives in reading as measured by the I.C.R.T. in reading.
- By August 18, 1989, 75 percent of students who attend a minimum of 15 sessions will show mastery of two or more objectives in mathematics as measured by the I.C.R.T. in mathematics.

EVALUATION PROCEDURES

Sample

OREA's sample for the summer Chapter 1 evaluation consisted of all student participants, site supervisors, teacher-trainers, and Chapter 1 reading and math classroom teachers. OREA also conducted 14 reading and 14 math classroom observations.

Data Collection

OREA consultants collected Data Retrieval Forms (D.R.F.s) for all program participants (1,537), interviewed all 13 site supervisors and eight of nine teacher-trainers, and surveyed 93 percent (133 of 143) of all Chapter 1 reading and math classroom teachers. They also conducted observations of Chapter 1 classrooms.

Instrumentation

OREA consultants recorded interview and survey data on forms developed by the Special Education Evaluation Unit for Chapter 1 classroom teachers, teacher-trainers, and site supervisors. OREA also developed a semi-structured guide for conducting Chapter 1 classroom observations. Finally, OREA developed data retrieval forms to record student achievement information. Instruments were specifically designed to address all program

implementation and outcome evaluation questions.

Data Analysis

OREA consultants coded, aggregated, and analyzed interview schedule and survey responses to describe the implementation of the Chapter 1 program. OREA staff also evaluated the extent to which the program met its outcome objectives by tabulating the number of objectives attempted and mastered by each participating student, applying descriptive statistics to calculate the percentage of students who accomplished the individual achievement objective, and then comparing the results to the program's overall reading and math objectives.

III. EVALUATION FINDINGS

PROGRAM IMPLEMENTATION

Participant Selection

The students targeted for the 1989 Chapter 1 summer program had mild to moderate handicaps. They were in grades two through eight in elementary, intermediate, and junior high public and nonpublic schools, had home addresses within designated Chapter 1 attendance areas, and were included in the New York City or State testing programs. A total of 1,537 students participated in the program. The great majority of these students (over 75 percent) were in MIS I (Modified Instructional Service), 13 percent were in MIS II, 11 percent were in MIS III, and one percent were in other program service categories. Most students (over 87 percent) were between eight and 13 years of age. (See Table 1.)

Program staff selected students using the following criteria: students in second grade who scored at or below the 35th Normal Curve Equivalent (N.C.E.) on the 1989 citywide Metropolitan Achievement Test reading section; students in grades three through eight who scored below the state reference point in reading on the Degrees of Reading Power (D.R.P.) test; and students who scored at or below the 35th N.C.E. on the 1989 Citywide Metropolitan Achievement Test math section. This procedure is consistent with that described in the program design.

Site Selection

Sites for the summer program were selected by the borough supervisor, who used the following criteria: space preference was given to larger schools with adequate

TABLE 1

Description of Student Population

(N = 1,537)[a]

Student Characteristics	STUDENTS Number	Percent
PROGRAM SERVICE CATEGORIES		
MIS I	1,155	75.1
MIS II	194	12.6
MIS III	169	11.0
MIS I/II	10	0.6
MIS I/III	9	0.6
Total	**1,537**	**99.9[c]**
AGE DISTRIBUTION		
6-7	118	7.7
8-9	424	27.6
10-11	556	36.2
12-13	358	23.3
14-15	77	5.0
16	4	0.3
Total	**1.537**	**100.1[c]**

Source: Student Data Retrieval Forms

[a] [b] Includes all students for whom D.R.F.s were submitted.
Age is calculated as the student's age at the end of August, 1989.
[c] Variation due to rounding.

- *More than 75 percent of students were MIS I.*
- *Over 87 percent of students were between eight and 13 years of age.*

cafeteria, classroom, and gym facilities; accessibility--each borough had at least one barrier-free site; location--sites were selected on the basis of their relative proximity to one another and the availability of public transportation.

Program Staffing

The program coordinator was responsible for the overall implementation of the program, ensuring that it was consistent with program guidelines for staff selection and development; for the purchase of instructional materials and test instruments; for the development and dissemination of student applications; for the supervision of site selection and class assignments; and for making overall arrangements for special education students to participate in the Gates Promotional Testing program.

Borough supervisors were responsible for administering and supervising the program at the borough level. They participated in the program's orientation session, provided ongoing staff development and supervision as needed, ordered all instructional supplies and arranged for their distribution, and arranged for students' summer records to be forwarded to the students' home schools at the conclusion of the program. They also reviewed student applications for program eligibility (test scores and home addresses) and for appropriate program assignments.

Each of the 13 sites had one site supervisor who was responsible for administering and supervising the program at that site. Supervisors went into the classroom to supervise, evaluate, and provide assistance to the instructional staff. They also coordinated pupil transportation, scheduled program activities, coordinated food services, supervised the maintenance of fiscal records, and submitted pupil attendance and other records.

Each of the 13 sites also had one unit teacher who was responsible for assisting the supervisor with the administration of the program at that site by maintaining daily attendance records, assisting in making arrangements for student transportation, organizing the use of testing and instructional materials that were shared among teachers, coordinating all testing at the site including the Gates testing program, and coordinating the Big Apple games. They also provided class coverage as needed when classroom teachers were absent.

Chapter 1 Reading and Math teachers were responsible for implementing the instructional component of the program by working with groups or individual students. They administered the reading and math I.C.R.T. to identify students' strengths and weaknesses. Based on these results, they planned and implemented remedial activities that met the needs of each student.

Paraprofessionals assisted teachers by working with small groups or individual students for short periods of time, providing them with intensive remediation in skill areas. In addition, they helped maintain students' folders and kept logs of their daily classroom activities.

Staff Development

Of the 128 teachers who responded to the item on OREA's Classroom Teacher Survey, 113 (88 percent) reported that they had participated in a Chapter 1 orientation session. Of these, 104 (94 percent) reported that the session had been helpful.

Of the 124 teachers who responded to the item, 63 (51 percent) reported that they had received in-service training during the summer term. Of these, 60 (95 percent) reported that the training had been useful, and 47 (75 percent) reported that it had been

sufficient. Seven (54 percent) of the 13 site supervisors whom OREA consultants interviewed also stated that the program had provided sufficient in-service training.

Student Instruction

Instructional Planning. Site supervisors overwhelmingly endorsed the use of the I.C.R.T. results for instructional planning in both reading and math; practically all of them reported extensive use of this test. Virtually all teachers responding reported at least some use of the test, and the majority reported extensive reliance on it for planning instruction. This procedure was in keeping with the guidelines of the Chapter 1 program. However, some teachers also suggested that decisions about student instruction could be based on testing that is done during the school year rather than on additional testing. Thus, although most teachers considered the I.C.R.T. useful for instructional planning, some felt that the use of ongoing test results for the same purposes would generate the same information and would be more efficient.

Instructional Equipment and Materials. During class visits, OREA consultants observed that teachers employed a wide variety of teaching materials. They used standard basal readers and skills sheets but also used a wide range of items for instruction, many of which they had carefully constructed themselves. Thus, although there was clearly a shortage of materials supplied by the program, teachers compensated for this by developing their own materials and using them creatively.

Instructional Approaches. Of the 133 teachers who responded to the item, 128 (96 percent) reported that they had used a holistic approach to reading instruction in keeping with the program guidelines. Of the 118 teachers who responded to the item, 116 (98 percent) reported that they were satisfied with it.

Teachers reported that they used a number of methods to integrate reading and math with athletic activities. Of the 133 teachers responding, sixty-three (47 percent) used sports-related materials in the classroom; 40 (30 percent) used sports as a topic about which students could write essays and reports; 34 (26 percent) used the topic to develop word problems; 34 (26 percent) of teachers used sports scores to demonstrate math operations; 17 (13 percent) used the topic to develop vocabulary lessons; 17 (13 percent) used it for discussions and verbal work; 15 (11 percent) used it to develop experience charts; 9 (7 percent) used it in math games; 10 (eight percent) used it to establish an instructional theme; and 17 (13 percent) used it in other relevant ways.

Site supervisors reported that teachers had many different ways of integrating field trips into their daily lessons. For example, teachers used field trips to further motivate students: to motivate them to read books on related subjects such as athletics or famous athletes, to do writing projects in which they described their personal field trip experiences, and to tackle math games or word problems devised by teachers and based on scores from sporting events in which the class had actually participated. It should be noted that all of the above activities were consistent with the holistic instructional approach described in the program design.

OREA consultants observed teachers using a wide variety of instructional strategies in the classroom. Discussion of personal experiences frequently took place in reading and math classes. Silent reading and vocabulary development took place in half of the observed reading classes, with direct reading instruction and answering questions occurring nearly as often. In math classes, OREA consultants frequently observed teachers' demonstrations, the use of word-problems, and students working independently.

Reading was frequently incorporated into math lessons, usually by introducing new

math-related vocabulary words (e.g., diameter) or by working on word problems. On the other hand, math was only rarely incorporated into reading lessons. Nor did OREA consultants observe reading instruction combined with athletics. While most teachers reported extensive use of sports oriented lessons, OREA consultants observed a high proportion of younger, lower-functioning students, whose lessons often dealt with vocabulary words and sentences of the simplest kind. Athletics rarely came into play in these cases.

OREA found that field trips were included in math and reading instruction only about 30 percent of the time. On most occasions when they were included, teachers would discuss the outing with students the next day. Thus, although the field trips played an important role in the instructional program, their role was not extensive.

OREA found that athletics were integrated into math instruction the majority of the time; score-keeping and the computation of lengths and distances was a convenient and effective ways of teaching these skills.

Parental Contact

OREA data reflected that program teachers maintained regular contact with the parents of participating students. Among those who responded, the vast majority of teachers reported using telephone calls and notes as the primary means of communicating with parents. Some teachers also conducted individual conferences, and a few reported holding open school nights and parent workshops.

Staff Perceptions

Program Strengths. Site supervisors and classroom teachers overwhelmingly singled out the work of the program staff, teachers, and paras as the number one reason

for the program's success. Other factors which made the program a success were the quality of materials provided by the program (although the quantity was not sufficient), and the excellent quality of program coordination.

Program Weaknesses. Supervisors who responded to OREA's questionnaire were concerned about smoothing out logistics as improving bus transportation and teacher training. Teachers identified such problems in the classroom such as unbearable heat, too much testing, too few field trips, and too much paperwork (many teacher respondents commented that keeping two folders for each student along with a daily log was excessive). Two complaints, which both teachers and administrators expressed, were the inadequate amount of supplies and materials and the absence of the Big Apple program during the last two weeks of instruction.

Suggestions for Program Improvement. Many teachers considered that the problem of insufficient supplies could be ameliorated if they had greater input into the ordering process. Although most teachers considered the I.C.R.T. useful for instructional planning, some felt that the use of ongoing test results for the same purposes would generate the same information and would be more efficient. They further suggested that the problem of extreme heat in the classroom could be avoided by using downstairs classrooms. Many teachers asked why the Big Apple program could not coincide completely with the Chapter 1 program. Finally, in order to address the need for more staff development and training, some teachers suggested that more time be set aside during the weekly schedule for noninstructional activities such as staff development.

PROGRAM OUTCOMES

Attendance

Analysis of attendance data indicated that 66.3 percent of the students attended 20 or more of the program's 34 reading sessions, and that 66.3 percent of the students attended 20 or more of the program's 43 math sessions. The mean number of reading sessions attended was 21.2 (*S.D.* = 7.49) and the mean number of math sessions attended was 21.2 (*S.D.* = 7.29).

Reading Achievement

An analysis of the results of the I.C.R.T. in reading revealed that the program achieved its objective. More then 94 percent of the students attending a minimum of 15 sessions mastered two or more reading objectives. (A frequency distribution of the total number of reading objectives mastered is presented in Table 2.) The results are comparable to student performance in 1988, when the result was also 94 percent. The mean number of reading objectives mastered was 2.8 (*S.D.* = 1.09).

Mathematics Achievement

The program achieved its objective for mathematics. Ninety-seven percent of the students attending a minimum of 15 sessions mastered two or more objectives (see Table 3). These outcomes compare favorably with the 1988 result of 94 percent. The mean number of mathematic objectives mastered was 3.5 (*S.D.* = 1.22).

TABLE 2

Frequency Distribution of the
Total I.C.R.T. Reading Objectives Mastered[a]

Mastery Rate	Number of Students	Relative Percent	Cumulative Percent
5 or more	109	8.7	8.5
4	180	14.0	22.5
3	437	34.0	56.5
2	488	37.9	94.4
1	57	4.4	98.8
less than 1	16	1.2	100.0
TOTAL	1,289	100.0	

Source: Student data retrieval forms

[a]Students attending a minimum of 15 sessions.

- *Over 94 percent of the students mastered at least two skills.*

TABLE 3

Frequency Distribution of the
Total I.C.R.T. Mathematics Objectives Mastered[a]

Mastery Rate	Number of Students	Relative Percent	Cumulative Percent
5 or more	265	20.6	20.6
4	310	24.1	44.7
3	497	38.6	83.3
2	176	13.7	97.0
1	36	2.8	99.8
less than 1	3	0.2	100.0
TOTAL	1,287	100.0	

Source: Student data retrieval forms

[a]Students attending a minimum of 15 sessions.

- *Ninety-seven percent of the students attending a minimum of 15 sessions mastered at least two skills.*

IV. CONCLUSIONS AND RECOMMENDATIONS

The Division of Special Education's 1989 Chapter 1 summer program served 1,537 students with mild to moderate handicaps in grades two through eight, at 13 sites in elementary, intermediate, and junior high public and non-public schools. The program was designed to provide reading and math instruction while fostering social and emotional development.

The majority of teachers who reported to OREA questionnaires reported that they had received in-service training; 95 percent of these reported that the training had been useful, and 75 percent reported that it had been sufficient.

Almost all teachers used a holistic approach to instruction and found it satisfactory. Many integrated: reading with athletic activities, frequently creating sports-oriented lessons (although rarely in the reading lessons of younger, lower-functioning students); field trips with daily lessons (although not extensively); reading with math lessons (but seldom the reverse); and athletics with math lessons.

Chapter 1 teachers maintained regular contact with program parents through phone calls, notes, individual conferences, open school nights, and parent workshops.

Participating teachers identified the following program strengths: the work of program staff, teachers, and paraprofessionals; the quality of program materials (although the quantity was not sufficient); and the excellence of program coordination.

Teachers reported areas that needed improvement were bus transportation, teacher training, unbearable heat in some classrooms, too much testing, too few field trips, too much paperwork, an inadequate amount of supplies and materials, and the absence of the Big Apple program during the last two weeks of instruction.

Respondents suggested more teacher involvement in ordering materials to ameliorate the lack of supplies, the use of ongoing tests to generate information currently derived from the I.C.R.T., consistent use of downstairs classrooms to avoid the problem of extreme heat, improved coordination of the instructional program with the Big Apple program, and the allocation of more time for staff development activities.

The program met its objectives in both reading and mathematics. An analysis of the I.C.R.T. results revealed that more then 94 percent of the students attending a minimum of 15 sessions mastered two or more reading objectives, and that 97 percent of the students attending a minimum of 15 sessions mastered two or more math objectives. These results clearly surpassed the program objectives of 75 percent.

Based on its findings, OREA makes the following recommendations.

- Involve teachers in ordering materials to ameliorate the lack of supplies.
- Use ongoing tests to generate information currently derived from the I.C.R.T.
- Use consistent downstairs classrooms to avoid the problem of extreme heat.
- Improve coordination of the instructional program with the Big Apple program.
- Allocate more time for staff-development activities.